

Amendments to the Specification

Please replace the paragraph beginning at page 3, line 1, with the amended paragraph/line as follows:

a1 Fig. 17 is another implementation of a microelectrical mechanical (MEMS) optical display system according to the present invention.

Please replace the paragraph beginning at page 6, line 3, with the amended paragraph/line as follows:

a2 The final deposited layer in the MUMPs process is a 0.5 μm metal layer [[36]] 126 that provides for probing, bonding, electrical routing and highly reflective mirror surfaces. The wafer is patterned lithographically with the eighth mask and the metal is deposited and patterned using a lift-off technique. The final, unreleased exemplary structure is shown in Fig. 14.

Please replace the paragraph beginning at page 8, line 5, with the amended paragraph/line as follows:

a3 In one implementation, for example, MEMS reflective modulator 70 could include a 200 x 200 array of MEMS reflectors 72 for controlling light passing through a corresponding 200 x 200 array of apertures 66. In this implementation, for example, microlens array 62 could include 200 x 200 lenslets 64 that each have a focal length of about 1 mm, and apertures 66 may be positioned in a right, regular array with separations of about 50 μm between them. MEMS reflective modulator 70 in such an implementation could have dimensions of 1 cm x 1 cm. With lenslets 64 of projection microlens array [[80]] 62 providing magnification of about 2.5, display screen 86 could have dimensions of about 2.5 cm x 2.5 cm, or about 1 inch x 1 inch.

Please replace the paragraph beginning at page 10, line 7, with the amended paragraph/line as follows:

a4 Residual stress layer 182 is formed of a material (e.g., gold) that is selected to have a coefficient of expansion different from that of the semiconductor

(e.g., polysilicon) material of arm base 181. In the illustrated implementation, residual stress layer 182 is formed on top surface of arm base 181. The differing thermal coefficients of expansion of arm base 181 ~~[[and gold]]~~ and residual stress layer 182 characterize flexible arm 178 as a bimorph.

Please replace the paragraph beginning at page ~~10~~, line ~~77~~, with the amended paragraph/line as follows:

a5
In the activated, display ON state illustrated in Fig. 21, complementary signals or electrical states are applied by actuator controllers 192 and 194 to respective activation electrodes 190 and flexible arm 178 to impart electrostatic attraction between them. The electrostatic attraction between activation electrodes 190 and flexible arm 178 functions to hold flexible arm 178 generally flat against substrate 176. Separate activation of optional memory controller 198, connected to a memory electrode ~~[[200]]~~ 196, can then serve to hold flexible arm 178 generally flat against substrate 176 even after the complementary signals provided to activation electrodes 190 and flexible arm 178 are relaxed.

Please replace the paragraph beginning at page ~~11~~, line ~~8~~, with the amended paragraph/line as follows:

a6
Stand-off dimples 202 extending from flexible arm 178 toward substrate 176 hold flexible arm 178 in spaced-apart relation to substrate 176 in the activated, display ON state. Dimples 202 contact the electrically insulating (e.g., nitride layer) of substrate 176. A dimple 202 at the end of paddle end 180 also keeps reflector 72 flat (i.e., parallel to substrate 176) in the activated, display ON state, as well as keeping flexible arm 178 spaced apart from memory electrode ~~[[200]]~~ 196.

Please replace the paragraph beginning at page ~~12~~, line ~~1~~, with the amended paragraph/line as follows:

a7
Fig. 23 ~~[[s]]~~ is a schematic diagram of a 2x2 array 210 of actuators 170 having a storage or memory capability to illustrate the operation of actuators 170. The

operation of array 210 is described with reference to the following activation or control signals:

Please replace the paragraph beginning at page 14, line 1, with the amended paragraph/line as follows:

a8
Fig. 24 is a fragmentary schematic diagram of a 50 x 50 array 230 of actuators 170 having a storage or memory capability. Array 230 employs 50 row electrodes 232 that are coupled to corresponding row drivers 234, 50 column electrodes 236 that are coupled to corresponding column drivers 238, and a common storage electrode 240 for all actuators 170 connected to a storage driver 242. It will be appreciated that row drivers 234 and column drivers 238 may include an individual driver for each of respective electrodes 232 and 236, or may include a lesser number of drivers that are multiplexed among the electrodes. Drivers 234, 238, and 242 and other electronics can be formed on substrate 176 or as separate devices, depending on complexity, packaging and economics. A display processor 244 receives display signals from a display input 246 and provides corresponding control signals to drivers 234, 238, and 242.

Please replace the paragraph beginning at page 16, line 17, with the amended paragraph/line as follows:

a9
Step 262 indicates an "Increment Row" step in which counter "i" is incremented by a count of one. ~~Step 262 returns to step 258 repeatedly until all rows are addressed (e.g., until count "i" = 50).~~ Step 262 ~~[[the]]~~ then proceeds to step ~~[[262]]~~ 264.

Please replace the paragraph beginning at page 16, line 21, with the amended paragraph/line as follows:

a10
Step 264 indicates a "Repeat" step that returns to step 256. Step 264 returns to step 258 repeatedly until all rows are addressed (e.g., until count "i" = 50).

A replacement abstract showing the changes made is appended hereto as a separate page. No new matter has been added.